universal, living, use to describe the polled cow in all her various forms.

Mr. Euren, in his history of the breed in the Red Polled Herd Book, Vol. I., very evidently was perfectly unconscious of the fact of the claims of the word *mooly* to being an early Suffolk provincialism. If he had, how more positive would have been the remarkable query he makes—showing how close his "speculation" came to real exactitude;—note he uses marks indicating the "foreign" use of the word: "'Muley' cattle have been in Virginia for a great many years, and their descendants have also been uniformly polled. . . . It would be of value to the students of the history of cattle were search to be made respecting the introduction of polled stock into America. It is recorded that many of the earlier settlers were natives of Norfolk and Suffolk villages. May they not have taken over polled cattle, which at that day were so numerous in Suffolk and on the Norfolk borders?"

He does not suggest that these settlers, if they did not—the first of them—take polled cattle, took the word *mooly* with them; and, finding that the cattle there, of various origins, then or subsequently introduced, frequently coming polled, applied the word to them they had been accustomed to.

HISTORY OF GARDEN VEGETABLES.

BY E. LEWIS STURTEVANT, M.D.

(Continued from page 433.)

Ice Plant. *Mesembryanthemum crystallinum* L.

THE ice plant, from the Cape of Good Hope, was introduced into Europe in 1727.[1] It is advertised in American seed lists[2] of 1881 as a desirable vegetable for boiling like spinage, or for garnishing. Vilmorin[3] says the thickness and slightly acid

[1] Noisette. Man., 1829, 538.
[2] Thorburn's Cat., 1881.
[3] Vilmorin. The Veg. Gard., 1885, 275.

flavor of the fleshy parts of the leaves have caused it to be used as a fresh table vegetable for summer use in warm, dry countries. It is, however, he adds, not without merit as an ornamental plant.

It is called in France *ficoide glaciale, glaciale;* in Germany, *siskraut;* in Flanders and Holland, *ijsplant, ijskruid;* in Italy, *erba diacciola;* in Spain, *escarchosa, escarcha.*[1]

Italian Corn Salad. *Valerianella eriocarpa* Desv.

This species occurs in gardens in two varieties. It has a lighter green, somewhat longer leaf than the ordinary corn salad, slightly hairy and a little dentate on the borders towards the base.[2] It has the same uses. It is described for American gardens in 1863.[3] Under its common name *grosse mache* it is noticed in France in 1829, and also as *mache d'Italie* in 1824.[4]

Called in France *mache d'Italie, regence, grosse mache;* in Germany, *italienischer ackersalat;* in Holland, *italiansche koornsalad.*

Valeriana coronata Willd. is occasionally grown abroad as a salad plant under the name of Italian corn salad.

Jerusalem Artichoke. *Helianthus tuberosus* L.

This plant was cultivated by the Huron Indians,[5] and was in use by the New England Indians at an early period.[6] It reached Europe in the early part of the seventeenth century, as it is not mentioned in Bauhin's Phytopinax, 1596, and is mentioned in his Pinax, 1623, where, among other names, he calls it "Chrysanthemum e Canada quibusdam, Canada & Artichoki sub terra, aliis." It is figured by Columna[7] in 1616, and also by Laurembergius[4] in 1632, and Ray,[8] 1686, is the first use I have found of the name Jerusalem artichoke, but Parkinson uses the word in 1640, according to Gray. In 1727 Townsend[9] says it "is a Root fit to be eat

[1] Vilmorin. Les Pl. Pot., 1883, 218.
[2] Vilmorin. Les Pl. Pot., 1883, 325.
[3] Burr. Field and Gard. Veg., 340.
[4] Noisette. Man., 1829; L'Hort. Fran., 1824.
[5] Asa Gray. Am. Agric., 1877, 142.
[6] Pickering. Ch. Hist., 749.
[7] Columna. Minus cognit. stirp. pars altera, 1616, 13.
[8] Laurembergius. Apparat. Plant., 1632, 131.
[9] Townsend, seedsman, 1726, 23.

about Christmas when it is boil'd"; Mawe,[1] in 1778, says it is by many esteemed; Bryant,[2] in 1783, says, "not much cultivated." In 1806 McMahon[3] speaks of it in American gardens, and calls it "a wholesome, palatable food." In 1863 Burr[4] describes varieties with white, purple, red and yellow-skinned tubers.

The Jerusalem artichoke is called in France, *topinambour, artichaut du Canada, A. de Jerusalem, A. de terre, crompire, poire de terre soleil vivace, tertifle, topinamboux;* in Germany, *erdapfel, erdbirne;* in Flanders, *aardpeer;* in Denmark, *jordskokken;* in Italy, *girasole del Canada, tartufoli;* in Spain, *namara pataca;* in Portugal, *topinambor, batata carvalha;*[5] in Bengali, *bhramoka, soorjyamookhee.*[6]

The history of the Jerusalem artichoke has been well treated by Gray and Trumbull, in the *American Journal of Science,* May, 1877, and April, 1883. It was found in culture at the Lew Chew islands about 1853.[7]

We offer a synonymy as below:—

Flos Solis Farnesianus sive Aster Peruanus tubercosus. Col., 1616, 13.
Helianthemum indicum tuberosum. Bauh. pin., 1623, 277.
De Solis flore tuberoso, seu flore Farnesiano Fabii Columnæ. Aldinus, 1625, 91.
Battatas de Canada. Park. par., 1629, ex Gray.
Adenes Canadenses seu flos solis glandulosus. Lauremb., 1632, 132.
Flos Solis pyramidalis, parvo flore, tuberosa radice, Heliotropium indicum. Ger., 1633.
Peruanus solis flos ex Indiis tuberosus. Col. in Hern., 1651, 878, 881, ex Gray.
Potatoes of Canada. Coles, 1657, ex Phillips.
Canada & Artischokki sub terra. H. R. P., 1665, ex Gray.
Chrysanthemum latifolium Brasilianum. Bauh. prod., 1671, 70.
Chrysanthemum Canadense arumosum. Cat. H. L. B., 1672, ex Gray.
Helenium Canadense. Amman., 1676, ex Gray.
Chrysanthemum perenne majus fol, integris, americanum tuberum. Mor., 1630, ex Mill dict.
Jerusalem Artichoke. Ray, 1686, 335.

[1] Mawe. Gard., 1778.
[2] Bryant. 1783, 33.
[3] McMahon. Am. Gard. Cal., 1806.
[4] Burr. Field and Gard. Veg. of Am., 1863, 39.
[5] Vilmorin. Les Pl. Pot., 561.
[6] Perry's Jap., ii., 44.
[7] Birdwood. Veg. Prod. of Bomb., 165.

Corona solis parvo flore, tuberosa radice. Tourn., 1719, 489.
Helianthus radice tuberosa esculenta, Hierusalem Artichoke. Clayton, 1739, ex Gronov.
Helianthus foliis ovato cordatis triplinervus. Gronov. virg., 1762, 129.
Helianthus tuberosus. Linn. sp.. 1763, 1277.

Kale. *Brassica oleracea acephala* D C.

The kales represent an extremely variable class of vegetable, and have been under cultivation from a most remote period. What the varieties of cabbage were that were known to the ancient Greeks it seems impossible to determine in all cases, but we can hardly question but that some of them belonged to the kales. Many varieties were known to the Romans. Cato,[1] who lived about B. C. 201, describes the Brassicæ as: the *levis*, large, broad-leaved, large-stalked; the *crispa* or *apiacon;* the *lenis*, small-stalked, tender, but rather sharp-tasting. Pliny,[2] in the first century, describes the *Cumana*, with sessile leaf and open head; the *aricenum*, not excelled in height, the leaves numerous and thick; the *Pompeianum*, tall, the stalk thin at the base, thickening among the leaves; the *Brutiani*, with very large leaves, thin stalk, sharp savor; the *Sabellica*, admired for its curled leaves, whose thickness exceeds that of the stalk, of very sweet savor; the *Lacuturres*, very large headed, innumerable leaves, the head round, the leaves fleshy; the *Tritianon*, often a foot in diameter, and late in going to seed.

I have not sufficient knowledge to give a complete history of the kales. I can only review those races which I have had an opportunity of studying, and this I will make as short as possible, intending only to bring into form for further study.

I. The form of kale known in France as the *Chevalier* seems to have been the longest[3] known, and we may surmise that its names of *chou caulier* and *caulet* have reference to the period when the word *caulis*, a stalk, had a generic meaning applying to the cabbage race in general, and we may hence surmise that this was the common form in ancient times, in like manner as *coles* or *coleworts* in more modern times imply the cultivation of kales. This word *coles* or *caulis* is used in the generic sense, for illustration, by Cato,

[1] Cato. Script. Rei Rust., 1787, vol. i., p. 75.
[2] Pliny. Lib. xix., c. 41; Lib. xx., c. 33.
[3] A. P. Decandolle. Mem. on the Brassicæ, 1821, 7.

two hundred years B. C.; by Varro and Æmilius Macer in the first century B. C.; by Columella the first century A. D.; by Palladius in the third; by Vegetius in the fourth century A. D.; Albertus Magnus in the thirteenth, etc. This race of the Chevaliers may be quite reasonably supposed to be the *levis* of Cato, sometimes called *caulodem*,[2] of no medicinal use.

According to Decandolle,[3] this race of Chevaliers has five principal sub-races, of which the following is an incomplete synonymy :—

I.

Brassica lævis. Cam. epit., 1586, 248; Matth. op., 1598, 366.
Br. vulgaris sativa. Ger., 1597, 244.
Cavalier branchu. Decand. mem., 1821, 9.
Thousand-headed. Burr, 1863, 236.
Chou branchu du Poitou. Vilm., 1883, 135.
Chou mille tetes. Vilm. l. c.

II. a. viridis.

Kol. Roszlin, 1550, 87.
Brassica. Tragus, 1552, 720.
Brassica alba vulgaris. J. Bauh., 1651, ii., 829.
Chou vert commun. Decand. mem., 1821, 9.
Cow Cabbage. Burr, 1863, 232.
Chou cavalier. Vilm., 1883, 134.
Brassica vulgaris alba. Chabr., 1677, 290.

II. b. rubra.

Brassica primum genus. Fuch., 1542, 413.
Br. rubra prima species. Lugd., 1587, 523.
Br. rubra. Ger., 1597, 244.
Br. rubra vulgaris. J. Baughin, 1651, ii., 831; Charb., 1877. 270.
Red cavalier. Decand. mem., 1821, 9.
Flanders kale. Burr, 1863, 233.
Caulet de Flander. Vilm., 1883, 134.

III.

Brassica vulgaris sativa. Lob. obs., 1576, 122; ic., 1591, i., 243; Dod., 1616, 621.
Br. alba vulgaris. Lugd., 1587, 520.
Brassica. Cast. Dur., 1817, 76.
Chou a fevilles de Chene. Decand. mem., 1821, 10.
Buda kale. Vilm., 1885, 141.

IV. a.

Brassica secundum genus. Fuch., 1542, 414.
Br. fimbriata. Lob. obs., 1576, 124; ic., 1591, 247.

Br. sativa crispa. Ger., 1597, 244.
Br. crispa. Dod., 1616, 622.
Br. crispa lacinosa. J. Bauh., 1651, ii., 832.
Chou vert frise. Decand. mem., 1821, 10.
Tall Green Curled. Burr, 1863, 236.
Chou frise vert grand. Vil., 1883, 131.

IV. b.

Brassica crispa, seu apiana. Trag., 1552, 721.
Br. crispa Tragi. Lugd., 1587, 524.
Br. tenuifolia laciniata. Lob. ic., 1591, i., 246.
Br. selenoides. Dod., 1616, 622.
Br. tenuissima laciniata. J. Bauh., 1651, ii., 832.
Br. selenoides. Ger., 1597, 248.
Chou plume or Chou aigrette. Decand. mem., 1821, 11.
Ornamental kales of our gardens.

V.

Brassica tophosa. Ger., 1547, 246; J. Bauh., 1651, ii., 830.
Br. tophosa Tabernemontano. Chabr., 1677, 270.
Chou palmier. Decand. mem., 1821, 11; Vilm., 1883, 133.

These forms occur in many varieties, differing in degree only, and of various colors, even variegated. In addition to the above we may mention the proliferous kales, which also occur in several varieties. The following synonyms refer to proliferation only, as the plants in other respects are not resembling:—

Brassica asparagoides Dalechampii. Lugd., 1587, 522.
Brassica prolifera. Ger., 1597, 245.
Brassica prolifera crispa. Ger., 1597, 245.
Cockscomb kale. Burr, 1863, 232.
Chou frise prolifere. Vilm., 1883, 133.

II. *The Dwarf Kales.*—Decandolle does not bring these into his classification as offering true types, and in this perhaps he is right. Yet olericulturally considered they are quite distinct. There are but few varieties. The best marked is the Dwarf Curled, the leaves falling over in a graceful curve and reaching the ground. It can be traced through variations and varieties to our first class, and hence it has been probably derived in recent times through a process of selection, or through the preservation of a natural variation. We have now an intermediate type between the Dwarf Curled and the Tall Curled forms in the intermediate Moss Curled.

III. *The Portugal Kales.*—We have two sorts of kales that have the extensive rib-system and the general aspect of the Portugal cabbage. These are the *Chou Brocoli* and the *chou frise de mosbach* of Vilmorin. I must consider these as bearing the same relation to the Portugal cabbage that our kales bear to the heading cabbages. Of their history I have ascertained nothing.

ON CERTAIN FACTORS OF EVOLUTION.[1]

BY ALPHEUS. S. PACKARD.

SO far as we are aware, Lamarck was the first naturalist to refer the atrophy of eyes and loss of vision to disuse from a life in darkness, as may be seen by the following extract from the chapter in his Philosophie Zoologique, entitled "De l'influence des circonstances sur les actions et les habitudes des animaux, et de celle des actions et des habitudes de ces corps vivans, comme causes qui modifient leur organisation et leurs parties." This work appeared in 1809, many years before the discovery of blind animals peculiar to caves.

"Des yeux à la tête sont le propre d'un grand nombre d'animaux divers, et font essentiellement partie du plan d'organisation des vertébrés. Déjà néanmoins la taupe, qui, par ses habitudes, fait très-peu d'usage de la vue, n'a que des yeux très-petits, et à peine apparens, parce qu'elle exerce très-peu cet organe.

"L'Aspalax d'Olivier (Voyage en Égypte et en Perse, II, pl. 28, fig. 2), qui vit sous terre comme la taupe, et qui vraisemblablement s'expose encore moins qu'elle à la lumière du jour, a totalement perdu l'usage de la vue; aussi n'offre-t-il plus que des vestiges de l'organe qui en est le siège; et encore ces vestiges sont tout-à-fait cachés sous la peau et sous quelques autres parties qui les recouvrent, et ne laissent plus le moindre accès à la lumière.

"Le protée, reptile aquatique, voisin des salamandres par ses rapports, et qui habite dans des cavités profondes et obscures qui

[1] From advance sheets of an essay on Cave Animals of North America. Mem. Nat. Acad. Sciences.